

WHAT IS CLAIMED IS:

1. A coordinate input apparatus for calculating a coordinate corresponding to a position of a light spot with which an input screen is irradiated, comprising:

5 a sensor array configured in such a manner that a plurality of optical conversion elements is arranged;

coordinate computing means for successively calculating coordinate data of the light spot from the output of the sensor array; and

10 determining means for determining a readout portion of the sensor array from the coordinate data whose ordinal number precedes a predetermined ordinal number, at the time of calculating the coordinate data of the predetermined ordinal number,

15 wherein the coordinate computing means calculates the coordinate data of the ordinal number based on the output from the readout portion determined by the determining means.

20 2. A coordinate input apparatus according to claim 1, wherein the plurality of optical/electrical conversion elements of the sensor array is linearly arranged, and wherein the coordinate data of the light spot can be read out with each of blocks into which the sensor array is split as a unit.

25 3. A coordinate input apparatus according to

claim 1, wherein the coordinate computing means calculates the coordinate data from a peak value of the output of the sensor array.

5 4. A coordinate input apparatus according to claim 2, wherein the coordinate computing means characterized by performing focus adjustment so that the width of the image of the light spot is several times as large as the pixel of the optical/ electrical conversion element
10 calculates the coordinate data from the peak value of the output of the sensor array.

5 5. A coordinate input apparatus according to any one of claims 1 to 4, wherein coordinate computing means characterized by performing focus adjustment so that the width of the image of the light spot is several times as large as the pixel of the optical/electrical conversion element calculates the coordinate data from the peak value of the output of
15 20 the sensor array.

6 6. A coordinate inputting method of applying irradiation light to a predetermined position on an image input screen by operation of a designation device
25 to generate a light spot, and obtaining coordinate data of the light spot by optical/electrical conversion of a sensor array, comprising steps of:

5 determining a readout portion of the sensor array
from the coordinate data whose ordinal number equals a
number immediately before a predetermined ordinal
number, at the time of calculating coordinate data of
the predetermined ordinal number, and

10 obtaining an output partially from a predetermined
number of optical/electrical conversion elements
corresponding to the readout portion determined in the
sensor array, calculating the coordinate data of the
predetermined ordinal number, and generating a
coordinate output signal corresponding to a
predetermined position of the coordinate input screen.

15 7. A coordinate inputting method according to
claim 6, wherein the each photo-electric element is
linearly arranged, and wherein readout is performed
with each predetermined block into which the sensor
array is split as a unit.

20 8. A coordinate inputting method according to
claim 6, wherein the coordinate data is calculated from
the peak value of the output of the sensor array.

25 9. A coordinate inputting method according to
claim 7, wherein the coordinate data is calculated from
the peak value of the output of the sensor array.

10. A coordinate inputting method according to any one of claims 6 to 9, wherein focus adjustment is performed so that the image of the light spot has an image width several times as large as the pixel of the
5 optical/electrical conversion element.

11. An information display system configured such a manner as to comprise:

10 a coordinate input apparatus applying light from a designation device to a coordinate input screen to generate a light spot, and detecting the light spot to generate a coordinate output signal corresponding to a predetermined position of the coordinate input screen; and

15 a display projecting information inputted by the coordinate input apparatus onto the coordinate input screen, based on the coordinate output signal.

the coordinate input apparatus, comprising:

20 a sensor array configured in such a manner that a plurality of optical/electrical conversion elements is arranged;

coordinate computing means for successively calculating coordinate data of the light spot from the output of the sensor array; and

25 determining means for determining a readout portion of the sensor array from the coordinate data whose ordinal number precedes a predetermined ordinal

number, at the time of calculating the coordinate data of the predetermined ordinal number,

wherein the coordinate computing means calculates the coordinate data of the predetermined ordinal

5 number, based on the output from the readout portion determined by the determining means.

12. An information display system according to claim 11, wherein the sensor array is configured in such a manner that a plurality of photo-electric elements is linearly arranged, and readout is possible with each predetermined block into which the sensor array is split as a unit.

15 13. An information display system according to claim 11, wherein the coordinate computing means calculates the coordinate data from the peak value of the output of the sensor array.

20 14. An information display system according to claim 12, wherein the coordinate computing means calculates the coordinate data from the peak value of the output of the sensor array.

25 15. An information display system according to claim 11, wherein the designation device has light emission control means for controlling an emission

2007/07/26 10:53:49

state of irradiating lights, and wherein focus adjustment is performed so that the image of the light spot has an image width several times as large as the pixel of the optical/electrical conversion element.

5

16. An information display system according to
claim 12, wherein the designation device has light
emission control means for controlling an emission
state of irradiating lights, and wherein focus
adjustment is performed so that the image of the light
spot has an image width several times as large as the
pixel of the optical/electrical conversion element.

17. An information display system according to
15 claim 13, wherein the designation device has light
emission control means for controlling an emission
state of irradiating lights, and wherein focus
adjustment is performed so that the image of the light
spot has an image width several times as large as the
20 pixel of the optical/electrical conversion element.

18. A computer readable memory for storing a computer program executing computers, wherein the computer is the coordinate computing means or determining means according to claim 1.

19. A computer readable memory for storing a

computer program executing computers, wherein the computer is the coordinate computing means or determining means according to claim 3.

5 20. A computer readable memory for storing a computer program executing computers, wherein the computer is the coordinate computing means or determining means according to claim 4.

10 21. A computer readable memory for storing a computer program executing the steps of the method according to claim 5.

15 22. A computer readable memory for storing a computer program executing the steps of the method according to claim 6.

20 23. A computer readable memory for storing a computer program executing the steps of the method according to claim 7.

24. A computer readable memory for storing a computer program executing the steps of the method according to claim 8.

25 25. A computer readable memory for storing a computer program executing the steps of the method

according to claim 9.

26. A computer readable memory for storing a computer program executing the steps of the method
5 according to claim 10.

27. A coordinate input apparatus for calculating a coordinate corresponding to a position of a light spot with which an input screen is irradiated,
10 comprising:

a sensor array configured in such a manner that a plurality of optical/electrical conversion elements is arranged;

15 calculating coordinate data of the light spot from the output of the sensor array; and

determining means for determining a readout-start portion of the sensor array from the coordinate data whose ordinal number precedes a predetermined ordinal number, at the time of calculating the coordinate data 20 of the predetermined ordinal number,

25 wherein the coordinate computing means calculates the coordinate data of the ordinal number based on the output from the readout-start portion determined by the determining means.

28. A coordinate input apparatus according to

claim 27,

wherein the determining means further predicts
order of readout of the sensor array predicted from the
coordinate data whose ordinal number precedes the
predetermined ordinal number, and

if there is no output from the readout-start portion determined by the determining means,

readout is performed in accordance with the order.

10 29. A coordinate inputting method of applying
irradiation light to a predetermined position on an
image input screen by operation of a designation device
to generate a light spot, and obtaining coordinate data
of the light spot by optical/electrical conversion of a
15 sensor array, comprising steps of:

determining a readout-start portion of the sensor array from the coordinate data whose ordinal number equals a number immediately before a predetermined ordinal number, at the time of calculating coordinate data of the predetermined ordinal number; and

obtaining an output partially from a predetermined number of optical/electrical conversion elements corresponding to the readout portion determined in the sensor array, calculating the coordinate data of the predetermined ordinal number, and generating a coordinate output signal corresponding to a predetermined position of the coordinate input screen.

30. A coordinate inputting method according to
claim 29, in the determination, order of readout of the
sensor array predicted from the coordinate data whose
ordinal number precedes the predetermined ordinal
5 number is further predicted, and

if there is no output from the readout-start
portion determined by the determining means,
readout is performed in accordance with the order.

10 31. A program for executing processing procedures
of the coordinate inputting method according to claim
6.

15 32. A computer readable memory storing a program
for executing processing procedures of the coordinate
inputting method according to claim 29.

20 33. A program for executing processing procedures
of the coordinate inputting method according to claim
29.